

Observ. V. Of watered Silks, or Stuffs.

Schem. 3.
Fig. 2.

There are but few *Artificial* things that are worth observing with a *Microscope*; and therefore I shall speak but briefly concerning them. For the Productions of art are such rude mis-shapen things, that when view'd with a *Microscope*, there is little else observable, but their deformity. The most curious Carvings appearing no better then those rude *Russian* Images we find mention'd in *Purchas*, where three notches at the end of a Stick, stood for a face. And the most smooth and burnish'd surfaces appear most rough and unpolisht: So that my first Reason why I shall add but a few observations of them, is, their mis-shapen form; and the next, is their uselesness. For why should we trouble our selves in the examination of that form or shape (which is all we are able to reach with a *Microscope*) which we know was design'd for no higher a use, then what we were able to view with our naked eye? Why should we endeavour to discover mysteries in that which has no such thing in it? And like *Rabbins* find out *Caballisms*, and *enigmās* in the Figure, and placing of Letters, where no such thing lies hid: whereas in *natural* forms there are some so small, and so curious, and their design'd business so far remov'd beyond the reach of our sight, that the more we magnify the object, the more excellencies and mysteries do appear; And the more we discover the imperfections of our senses, and the Omnipotency and Infinite perfections of the great Creator. I shall therefore onely add one or two Observations more of *artificial* things, and then come to the Treaty concerning such matters as are the Productions of a more curious Workman. One of these, shall be that of a piece of water'd Silk, represented in the second Figure of the third *Scheme*, as it appear'd through the least magnifying Glas. *A B*. signifying the long way of the Stuff, and *C D* the broad way. This Stuff, if the right side of it be looked upon, appears to the naked eye, all over so waved, undulated, or grain'd, with a curious, though irregular variety of brighter and darker parts, that it adds no small gracefulness to the Gloss of it. It is so known a propriety, that it needs but little explication, but it is observable, which perhaps every one has not considered, that those parts which appear the darker part of the wave, in one position to the light, in another appears the lighter, and the contrary; and by this means the undulations become transient, and in a continual change, according as the position of the parts in respect of the incident beams of light is varied. The reason of which odd *phenomena*, to one that has but diligently examin'd it even with his naked eye, will be obvious enough. But he that observes it with a *Microscope*, may more easily perceive what this *Protens* is, and how it comes to change its shape. He may very easily perceive, that it proceeds onely from the variety of the *Reflections* of light, which is caus'd by the various *shape of the Particles*, or little protuberant parts of the thread that compose the surface; and that those parts of the waves that appear

appear the brighter, throw towards the eye a multitude of light, whereas the darker scarce afford any. By reflection, the *Microscope* plainly discovers, as appears which you may perceive, that the brighter parts of the surface, denote an abundance of large and strong reflections, denoted for the surfaces of those threads that run the *long way* in the nical process of watering, *creas'd* or *angled* in another then they were by the weaving: for by the weaving the threads run round the warping threads; but by the watering, they are bent at an *angle*, or *elbow*, that is in stead of lying, or being bent as in the third Figure, *a, a, a, a, a*, are about *b, b, b* (b, b, b, b, b) ends, as 'twere, of the cross threads, they are bent about on the top of those threads, with an *angle*, as in the third Figure, that with all imaginable variety; so that, whereas before the light onely from one point of the round surface, appears now when water'd, reflect the beams from more then one face, as *de, de, de*, and in other postures they return from those surfaces. Hence in one posture they cover parts of the waves, in another the darker. And these are varied, according as the particular parts are variously creas'd, of which creasing we shall next examine; and here we shall see the formation from the Mechanism or manner of proceeding in which, as I have been inform'd, is no other then this.

They double all the Stuff that is to be water'd, that is, they take it through the middle of it, the whole length of the piece, and fold it on one side of the Stuff inward, and placing the two edges, one over the other, and as near as they can, place the wale so in that the wale of the one side may lie very near parallel to the wale of the other; for the nearer that posture they lie, the more the watering appear; and the more obliquely, or across they lie, the smaller are the waves. Their way for folding is thus: they take a Pin, and begin at one side of the piece, so moving it towards the other side, thereby direct the wale to the posite ends of the wale, and then, as near as they can, bring the posite ends of the same wale together, and so double the piece, repeating this enquiry with a Pin at every yard through the whole length; then they sprinkle it with water longways, placing between every fold a piece of Pastboard, means all the wrong side of the water'd Stuff becomes the right wales, and the wales on the other side become the right wales, whence the creasings or angular bendings of the wales appear perspicuous. Having folded it in this manner, they place it between two adjacent Pastboard into an hot Press, where it is kept very close till it be dry and stiff; by which means, the wales of the one side leave their own impressions upon each other, as is manifest by the second Figure, where 'tis obvious enough, that the piece *A B C D* runs parallel between the pricked lines